

# *Science Without Borders*

---

Michael Abbey  
Office of International Research Programs  
'Asia' Program Coordinator  
ARS



United States Department of Agriculture • Agricultural Research Service

# Office of International Research Programs

- **Mission Statement**

**OIRP enhances the effectiveness and impact of U.S. Agriculture by facilitating international research activities to:**

- ✓ Extend the capacity of the National Programs to address problems confronting U.S. Agriculture.
- ✓ Promote participation in the international scientific community to expedite the exchange of innovations, data and germplasm.
- ✓ Facilitate international cooperation and collaboration on mutually beneficial high priority agricultural research.

- **Staff ~12 staff including PASA and International Liaisons**



# ARS International Research Selection Criteria

- Research priorities agreed by National Programs and scientists (e.g. bioenergy, crop and animal genotyping and phenotyping, soybean rust, avian influenza, water reuse and agriculture management, etc.).
- Presidential international S&T and/or agriculture initiatives (e.g. AKI, bioenergy, science for diplomacy).
- Align with strategic research of international organizations (e.g. Organization for Economic and Cooperation Development (OECD), World Meteorological Organization (WMO)).
- ARS bi-lateral MOU (e.g. China, Brazil, Israel, Mexico, Korea, Pakistan, Malaysia)



# ARS International Collaborations and Cooperation Business Models

- **OIRP funded international research (appropriation and extramural of \$5.5. plus million in FY2007)**
  - Conferences, workshop, and development of research plan.
  - Supports mutually beneficial international research projects.
  - OIRP has funded approximately 140 research projects since 1999.
  - The research is largely focused on Crop and Animal Production and Protection, and to a lesser extend on Nutrition, Food Safety and Natural Resources.
- **Contribution in-kind** (e.g. scientific exchanges and visits, workshops).
- **Funds supported by international collaborators.**



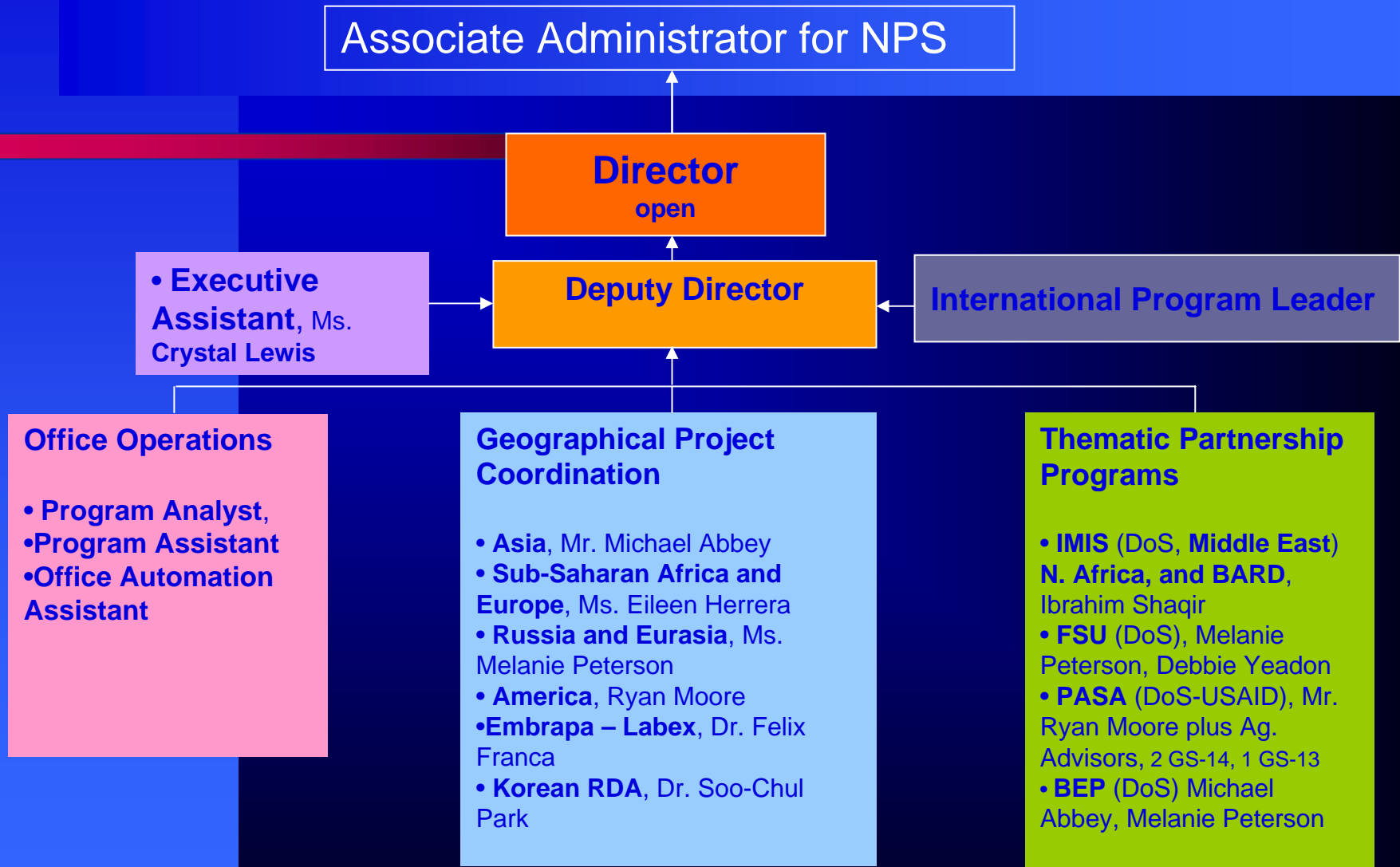


# ARS Partners in International Research

- USDA
- Other Government Agencies
- State Universities
- International Organizations
  - U.N. Food and Agriculture Organization
  - World Bank
  - U.S./Israel BARD



# OIRP Organizational Chart



# Geographical Focus

---



# Research in Latin America

- **Brazil – ARS-Embrapa**

- Embrapa supports salaries and expenses, OIRP hosts a Labex Coordinator, ARS provides office, laboratories, equipments, supplies and research opportunities.
- Senior-level scientists working on nanotechnology (Albany), plant genetic resources (Ft. Collins) and food safety (Pathogen Modeling Program, Wyndmore).
- June 2007 Under Secretary visit to Brazil on Bioenergy and Biobased Products Research.

- **Mexico**

- Food safety, animal health, plant biotechnology and bio-safety, water and environmental impact.





# Research in Africa

- Rift Valley Fever; tool to forecast and vector research (first time outbreak in Saudi Arabia)
- Wheat Stem Rust; Kenya, Ethiopia
- Cocoa research; global germplasm cooperation to improve breeding
- Drought information system for agricultural applications

# Research in Middle East

- **Israel, Jordan and Palestine – Science for Diplomacy**
  - US – Israel Bi-National Agricultural Research and Development Fund (BARD) (e.g. post-harvest, water management).
  - A potential expansion to include Jordan and Palestine and establish a Multi-National Agricultural Research and Development (MARD) cooperation.
  - Irrigation Management Information System (\$400K in FY2007).

# Thematic/Partner Focus

---



# Overseas Biological Control Laboratories

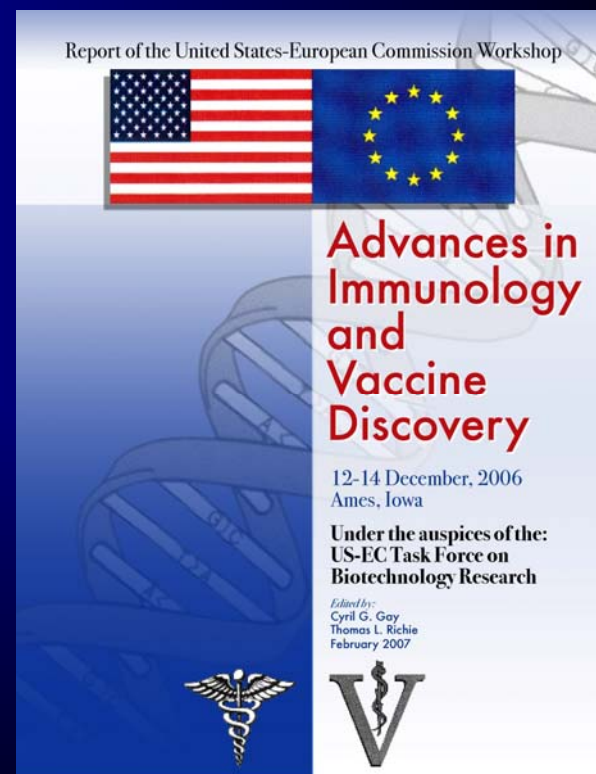
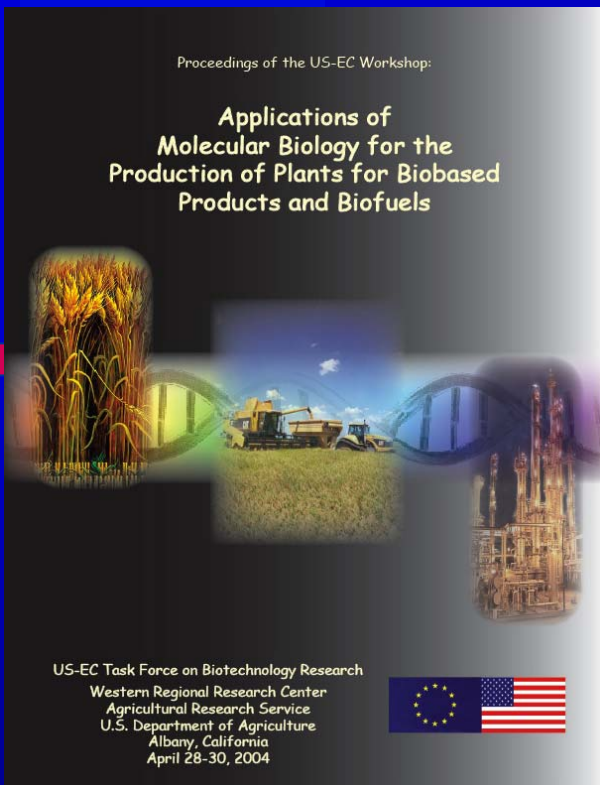
- Brisbane, Australia
- Montpellier, France
- Buenos Aires, Argentina
- Beijing, China
- Formerly administered out of OIRP, (for) now, out of CPP/Judy St. John
- Projects are proposed to include research done at OBCL, queue is dynamic

# ARS cooperates on activities through the US-EC Biotechnology Research Task Force

One of the work groups under the Task Force has identified key areas to focus research using **molecular approaches** to enhance the efficiency of biobased products, including bio energy. These include addressing the **cell wall**; **oil seed products**; and **bio polymers**.

## EUROPE

A second Task Force meeting in May 2007 was to help catalyze cooperation in research needed to move the field of vaccine development forward. This follows a highly successful workshop of experts in human and animal diseases to identify research priorities.



# Collaborations with CGIAR

- **Examples of Research Areas**

- Sustainable farming practices
- Natural resource management
- Crop breeding for traits like greater pest resistance and nutritional content
- Identification of lines and varieties with resistance to the Ug 99 for wheat stem rust

- **Strengthen Collaboration**

- Further programmatic scientist to scientist collaboration
- CGIAR Challenge Programs; HarvestPlus, Climate and Agricultural Adaptation



# Partnership with USAID

- **Participating Agency Service Agreement (PASA) Program**
  - Largely focus on bio-technology research.
  - 15 % directly contributes to the OIRP ARS-USAID Collaborative Research Funds (CRF).
  - A strategic approach for OIRP CRF; FY2007 Wheat Stem Rust (\$200K).

# Biosecurity Engagement Program

- This particular program is focused on SE Asia
- ARS in collaboration with the U.S. State Department (~\$1 million/year).
- Animal diseases including highly pathogenic avian influenza, foot and mouth disease, Japanese encephalitis, brucellosis, etc.
- Collaborate with scientists in Indonesia, Philippines, and Pakistan.





# Research in Russia and Eurasia

- **Former Soviet Union (FSU) Scientific Corporation Project (\$2.5 million in FY2008)**
  - Leverage ARS agricultural research of mutual interests for capacity building of new-generation expertise in Former Soviet Union (FSU) countries.
  - State Department Funding/may pick institute and ask us to develop project that fits
  - Collaborate with 31 former Bio-Weapon institutes in FSU.
  - 80 projects funded in Russia, Kazakhstan, Uzbekistan, and Tajikistan in plant and animal health, crop improvement and natural resources since 2001.

# Research in Asia

- **China**

- Ministry of Science and Technology (MOST) – USDA Joint Working Group (JWG) since 2002 in the areas of food safety, agricultural products processing, agricultural biotechnology, natural resource management, dairy production and processing, water-saving agricultural technology.
- Established **virtual Joint Centers of Excellence** for Soil and Water Conservation and Environmental Protection, Grazing-Land Ecosystems Sustainability, Wheat Quality and Pathology, and Agricultural Products Processing.
- In-kind leverage with more than 20 agricultural research institutes and organizations in China.



# USDA-MOST Protocol

## Emphasis Areas

- Agricultural Biotechnology
- Natural Resources Management
- Dairy Production and Processing
- Food Safety
- Agricultural Products Processing
- Water-saving Technology
- BioFuels (new for 2008)



# Sino American Biological Control Laboratory

- Established in 1990
- Supports the exploration of biological control agents in China
- 13 target pests



# Major Research Partners

## Asia (outside of China)

- Pakistan, Philippines and Indonesia (BEP) – animal health (AI, FMD, PRRS, etc.)
- Korea (virtual labs - unique model for collaboration) – plant genomics, water, etc.

# Food and Agriculture – A Regional Approach?

- Food safety, processing, nutrition, biotechnology, etc. – global issues
- An East Asian regional approach?
  - Added-value in multi-national joint research?





*Leading America towards a better future  
through international partnerships .*

**Thank you for your kind attention**

